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BUSINESS AND THE WAR

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ALEXANDER HAMILTON INSTITUTE
ASTOR PLACE - - - NEW YORK

BUSINESS AND THE WAR

An investigation of the ability of America's industries to serve the Government and care for the needs of private consumers during the war.

August 20, 1917

ALEXANDER HAMILTON INSTITUTE
ASTOR PLACE NEW YORK

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BUSINESS AND THE WAR

I. CONDITIONS AT THE OUTBREAK OF THE WAR

1. Domestic Industry and Trade

The outlook during the first seven months of the year 1914 preceding the outbreak of the European War was as dismal in the United States as it was abroad. Trade and industry gradually was going from bad to worse. Enterprise was at a low ebb and all the principal branches of business were depressed. The railroads, with their earnings slumping and their credit impaired, were face to face with a desperate situation. Uncertainty and unrest were everywhere and various adjustments had to be made because of legislative proposals and enactments affecting business and industry.

These general conditions of depression were clearly indicated by the Federal Census of Manufactures in 1914. Owing to the contraction in industry, the growth in capital invested, wage-earners employed, and value of products was less during the five years preceding the war, or the period 1909-1914, than during the previous manufacturing census period, 1904-1909.[1]

[1] For a detailed statement as to the development of industry during the period 1899-1914 see Appendix "A."

2. The Situation Abroad

The same general condition of affairs existed in other leading commercial and industrial nations. The immediate causes were without exception local, differing in one country from those in another, yet in all cases marked by the same effect—the development of uncertainty and a consequent lack of enterprise and activity in business and finance.

The Irish question had placed Great Britain on the brink of civil war. Internal trouble and radical policies were disturbing France. Old political, financial, and personal scandals were revived by the Caillaux-Calmette affair. The French government was forced to postpone extensive refunding operations which in turn embarrassed French bankers who were carrying large amounts of the unfunded obligations of the Balkan States. Private credit had to wait on both of these. In Russia also there was widespread political and industrial dissension which in the months immediately preceding the war broke forth into strikes and sanguinary riots in Petrograd and in other large cities. Russian business was unsettled, failures were increasing, and by May, 1914, so great apprehension was felt as to Russian financial affairs that a conference of bankers was called by the Minister of Finance.

Apparently these internal difficulties in Russia, England, and France made the time propitious for a blow from the outside; and there are not wanting those who say that a consideration of these facts induced the Kaiser to precipitate the war.

II. THE WAR BEFORE THE UNITED STATES ENTERED

1. Effect of the War in the United States—Industrial Paralysis

The immediate effect of the outbreak of hostilities in Europe upon trade and industry in this country was to intensify the unfavorable tendencies which already existed. For a time trade with foreign countries stopped entirely. The mechanism of exchange was disrupted. The apprehension of financial disaster closed the New York and other stock exchanges on July 31, 1914. They did not completely resume until the 12th of the following December. As a consequence, internal trade and industry were for a time disorganized, and in some sections, as the South—where the outlet for staple commodities was shut off by the closing of the channels of foreign trade—business was completely paralyzed.

The railroads, too, were in some sections prostrated by the trade depression. In some instances the volume of freight traffic declined to less than half of normal. By the close of the year 1914 railroads representing more than one-third of the mileage of the country were declared insolvent and passed to the control of the Courts.

Pig iron production in December, 1914, had fallen to the lowest point since 1908. At the close of

the year, the steel plants were reported to be working at only thirty per cent of their normal capacity. These conditions continued thru the winter of 1914-1915. There was much suffering among the working classes, and in all the large cities public measures had to be taken for the relief of the unemployed.

2. Revival of Trade and Industry

Fortunately before the end of the winter a tendency toward more favorable conditions became noticeable. The Alexander Hamilton Institute, it will be recalled, in the months following the opening of the European war had prepared a bulletin showing what effects on business in this country might be expected from the abrupt termination of normal commercial relations. These effects now began to be evident. Great Britain, France, Russia, Italy, and Canada began to purchase from us foodstuffs, live stock and raw materials, and to place large contracts for future delivery of munitions, war stores of all kinds, machinery and industrial supplies. Competitive bidding stimulated prices and the need of these countries was such that they were glad to pay the prices asked.

Under these influences during the first half of 1915, the industries directly stimulated by war orders began to expand, and by the third quarter of the year, the demand for all commodities was on such a scale that all lines of industrial enterprise were stimulated, domestic trade became very active, and foreign commerce reached previously unknown proportions.

3. Beginning of War Orders

The Allies did not begin their heavy purchases during the five months following the opening of the war. Until the end of 1914, war orders had been received in the United States to the extent of only $190,719,500, divided approximately as follows:

Sugar	$7,627,000
Dry Goods (miscellaneous textile fabrics, etc.)	19,583,000
Iron and steel products	21,084,500
Shoes, harness and miscellaneous leather goods	9,705,000
Automobile trucks, autos and vehicles	12,403,000
Arms, ammunition, guns, weapons, etc.	27,890,000
Horses, pliers, horseshoe calks, canned goods, cans, canteens, rubber goods, coal, meat products, wheat, submarines, shaving brushes, etc.	92,427,000

The great bulk of the purchases and contracts of the Allies in this country were made during 1915. Estimates of war orders received by American manufacturers during that year from the Allied governments indicate that the total reached the sum of $2,000,000,000.

4. Rapid Growth of Foreign Trade

Our exports of merchandise, as was to be expected, advanced by leaps and bounds. The total value of merchandise sent abroad for the years 1913-1917 (twelve-month periods ending May 31st) was as follows:

1913	$2,440,712,975
1914	2,370,912,020
1915	2,657,113,968
1916	4,137,344,345
1917	6,182,886,159

The great increase in the exportation of war munitions, supplies, and accessories was a direct reflection of war orders as well as of the increased industrial activity in this country which had been stimulated by the European conflict. This increase is shown in the following table.

EXPORTS OF WAR MUNITIONS AND SUPPLIES, 1913-1917

(Compiled from Reports of Bureau of Foreign and Domestic Commerce for Fiscal Years Ending June 30)

	1913-14	1914-15	1915-16	(Eleven Months) 1916-17
War Munitions				
Explosives	$6,272,207	$41,476,188	$437,081,928	$756,862,299
Aeroplanes	226,149	1,541,446	7,002,005	3,095,330
Firearms	3,442,297	9,474,947	18,065,485	84,758,564
Wire	9,579,773	16,838,941	47,678,939	44,078,132
Total	$19,520,426	$69,331,522	$509,828,357	$888,794,325
War Accessories				
Automobiles	$33,198,806	$68,107,818	$120,002,296	$106,778,246
Motorcycles	1,234,194	1,494,176	3,369,616	3,051,115
Scientific Instruments [1]	3,450,404	4,357,036	7,344,027	7,707,748
Total	$37,883,404	$73,959,020	$130,715,939	$117,537,109
War Supplies				
Horses and Mules	$4,079,793	$76,772,677	$96,491,458	$83,030,779
Brass	7,472,476	20,544,559	184,876,044	361,726,725
Breadstuffs	165,282,385	573,823,676	435,679,323	510,961,137
Chemicals, Drugs (Dyes and Medicines)	27,524,672	46,380,986	124,478,671	168,784,663
Coal and Coke...	62,710,827	58,210,615	69,635,154	76,728,107
Copper	149,479,645	99,778,177	174,677,609	291,423,558
Boots and Shoes.	18,980,729	27,477,120	47,890,172	33,870,319
Metal Working Machinery	14,001,359	28,162,968	61,315,032	76,348,162
Lead	2,610,207	9,044,479	13,823,004	14,704,259
Total	$452,142,093	$840,155,257	$1,088,866,467	$1,517,577,709

[1] Includes telephones, telegraph and wireless instruments.

It will be noted that the exports of the principal items of munitions and war supplies during the fiscal years 1914-1917, as specified in the foregoing statement, reached the enormous total of $3,152,692,527. The exportation of war munitions (explosives, aeroplanes, firearms, and wire) shows a remarkable advance from $19,520,426 in 1914 to $888,794,325 in 1917 (eleven months only). Other articles of export showing large increase during the same period were automobiles, motor trucks, horses and mules, brass, foodstuffs, chemicals, drugs, copper, metal working machinery and lead.

5. Foreign Loans and Gold Importations

This immense growth in the volume of exports, however, produced a large trade balance in favor of this country which foreign nations met by the sale of securities or the shipping of gold. Loans aggregating more than two billion dollars were floated in this country by Great Britain, France, Russia, and Italy. Whereas in 1915 the exportation of gold by the United States exceeded all imports by $68,465,097; in 1916 imports exceeded our exports of gold by $338,857,789, and in 1917 by $775,502,734.

6. New Capital Issues

The volume of the first flood of war orders were unexpected. It was also practically assumed that these orders could be handled by existing companies. After the first half of 1915, however, it was seen

that the extent of the business required additional financing on a large scale. The authorized capital stock of new companies, organized between August 1, 1914, and January 1, 1917, and largely the outgrowth of war conditions, totaled $959,854,000, or almost one billion dollars. These companies were divided as follows:

Oil and Gas	$548,316,000
Ship Operating and Building	108,972,000
War Munitions and Supplies	134,027,000
Dyes and Chemicals	168,539,000
	$959,854,000

7. Reduction in Foreign Demands

Relatively few new war orders, especially for munitions and war supplies, were placed in this country by the Allies in 1916. By the end of 1915, the Allied governments had negotiated contracts covering most of their needs with firms and corporations whose reliability they had tested. Comparatively little bidding for new business remained to be done. The majority of orders placed or continued were for raw or semi-finished products, the Allies having by this time developed their own manufacturing industries to a point where they could more nearly fill the need for munitions required for their operations. Opportunity was thereby afforded the United States to provide for the arming and equipping of its own armies from the industrial facilities which the demands of the Allies

had previously created. Large resources in the form of munitions manufacturing equipment were released for the service of the United States just at the moment when this nation had determined to enter the war.

III. AMERICA'S ENTRANCE INTO THE WAR

1. Immediate Effects

Our entrance into the war against Germany on April 6, 1917, gave an additional impulse to industrial and trade activities. Its effect was threefold: (1) the slowing down in the production of munitions immediately ceased as our own demands took up the slack caused by the cancelation of the war orders of the Allies; (2) the estimates worked out for arming and equipping our army and navy surpassed in magnitude all previous war purchases and gave assurance of unprecedented activities in domestic trade and industry; and (3) our own purchases were augmented by those of our more needy allies—France, Italy, Russia, and Great Britain, to whom we extended liberal credits.

The only disturbing element in all this was the uncertainty as to the extent and method of Government regulation of prices, wages, and profits. Certain branches of industry have felt it to be unsafe to go ahead with productive activities until a definite policy of dealing with these factors has been worked out and announced.

2. The War Budget of the United States

The first war estimates submitted by the Secretary of the Treasury called for an outlay of five billion dollars. Of this large sum three billions was

to be made immediately available for the mobilization, equipment, and subsistence of our fighting forces. The remaining two billions was to be loaned to our allies for the purpose of buying war supplies in the United States. But in less than three months after our declaration of war against Germany it was found that this financial program would be entirely inadequate. On July 27th, Secretary McAdoo announced that the estimated Government requirements for war and other purposes during the fiscal year ending June 30, 1918, will aggregate in round numbers eleven billion dollars.

At the time of this writing appropriations of $11,651,194,000 either have already been made or are now pending. Additional loans of three billion dollars to our allies, it was announced, will also have to be made—that is, a total credit of five billion dollars for the year. This will raise the appropriations for the fiscal year to the large total of seventeen billion dollars.

Of the appropriations already made or contemplated, $8,673,000,000 are to be used for army purposes and $1,324,000,000 for the navy. For the conduct of the various regular departments and for special projects, $1,200,000,000 had already been appropriated by the middle of July. On the basis of a conservative estimate, the effect of our entrance into the war has been to increase the demands upon the industrial resources of our country —agriculture, mining, and manufacturing,—by eight or nine times the combined demand of the Allies

at the time when their contracts and purchases here were at their highest point. It is impossible to describe in detail the contracts or purchases for munitions and supplies already made for the army and navy. They comprise thousands of different classes of commodities and affect all branches of manufacturing and mining.[1]

The industrial demand created by these orders covers the usual lists of supplies and munitions purchased by the War and Navy Departments. They do not include the special and extensive projects represented by the program of the Shipping Board, the Aircraft Production Board, and the Board charged with the erection of cantonments or camps for the soldiers.

3. The Building of Ships

The Emergency Fleet Corporation, which is owned and operated by the United States Shipping Board, has already received an appropriation of $500,000,000, and it is reported that an additional sum of like amount will be requested in the near future. The plans of the Corporation recently announced by General Goethals will probably be adopted by his successor. They provide for the construction of 425 ships of all sorts with an aggregate carrying capacity of 1,860,800 tons. Contracts for another 100 wooden ships are in negotiation. For

[1] A detailed list of War Orders by the United States, from the time of our entrance into the war up to July 31, 1917, so far as information is available, arranged by industries, will be found in Appendix "B."

obtaining the greatest amount of the most serviceable ocean transportation within the shortest time chief reliance will, however, be placed in the construction of fabricated steel ships of standard design. By the use of existing facilities, and by the erection of two Government-owned shipyards, it is hoped to produce during the next two years 400 of these standardized ships of an aggregate carrying capacity of 2,500,000 tons. These plans are to be further supplemented by the commandeering and completion of 1,500,000 tons of shipping now under construction in private shipyards.

4. The Aerial Fleet

In accordance with the recommendations of the Aircraft Production Board of the Council of National Defence an appropriation of $640,000,000 has also been made by Congress and approved by President Wilson for the construction of an air fleet and the training of aviators. It is planned to construct during the next year or eighteen months about 20,000 complete planes together with an extra motor for each machine. For the framework of these planes, twenty-four million feet of spruce lumber will be required, and to secure this, it will be necessary to work out special lumbering operations. The linen to cover the framework will be imported from Great Britain. The motors, which are to be standardized, will be constructed by automobile and auto truck companies, and this work, if it is deemed necessary, will take precedence over the manufac-

ture of pleasure vehicles. The production of the steel required for the motors will not appreciably interfere with other demands for steel products.

Elaborate and highly-specialized instruments for measuring altitudes, determining directions, and for other purposes, must also be provided; and as most of these instruments have hitherto been produced in Germany, the demand for their production may be expected to stimulate the development of practically a new industry in this country.

The erection of twenty-four training camps, at a cost of three to five million dollars each, will also add greatly to the demand for lumber, hardware, and other materials.

5. Cantonments

The training camps or cantonments for officers and men selected under the Army Act of 1917 will require for their construction a large amount of lumber and other materials. There are to be sixteen cantonments in all, capable of accommodating 43,000 officers and 1,034,270 men, and involving with furnishings an outlay of approximately $75,000,000. Some of the principal items of construction cost are as follows:

Buildings	$40,290,800
Hospitals	2,014,500
Water and Sewer Systems	2,490,000
Electric Lighting	604,000
Roads	5,036,000
Ice Boxes	270,000
	$50,705,300

Altho the cantonments will vary in size, each will when completed be a city of from 35,000 to 46,000 inhabitants, having its own sewer system, water and lighting plants, hospital, bakeries, and similar equipment. Some idea of the quantities of materials required and of the industries affected may be gathered from the fact that each cantonment will require for its erection 26,000,000 feet or 1,325 car loads of lumber; 1,700,000 feet of wall board; 85,000 feet of piping for sanitation and other services; 6,457 solid board doors; 923 glazed doors; 515 screen doors; 37,000 square feet of wire screening; 37,000 window shades; 32,000 squares of roofing; 2,665 kegs of nails; 4,665 casks of Portland cement; 1,440 cubic yards of sand; 5,123 cubic yards of stone; and other building material in similar proportions.

IV. ABILITY OF AMERICAN INDUSTRIES TO TAKE CARE OF WAR ORDERS

Obviously, the important question under present conditions is: To what extent can American industries take care of our own war orders? It is almost equally important to know whether they can take care of the requirements of our allies and to what extent war orders will interfere with production for private purposes. The answer to these questions varies from industry to industry. No general statement can be given. Each industry must be considered from the standpoint of its own facilities, conditions, and the demands made upon it.

1. Transportation

The key to the internal industrial situation is, unquestionably, the railroads, just as the successful prosecution of the war in an international way is dependent upon ships. The movement of raw materials to, and of finished products from, industrial establishments, as well as the constant transportation of food products to our industrial workers and fighting forces, depends upon railroad facilities and railroad efficiency. Marvelous developments in operating efficiency have already been made under the direction of the National Railroad Board which has a quasi-official status under the Council of National Defense. The railroad companies, however, are handicapped by the fact that previous to the war their earnings were low and their credit so impaired that sufficient capital for development work could not immediately be secured. Under present conditions it is necessary to give preference to the shipment of certain commodities such as foodstuffs, raw materials and coal. As time goes on, the demands of the Government may be expected to absorb more and more of the available transportation facilities to the exclusion of private business. Deliveries will undoubtedly be uncertain, since it will be possible to handle private freight only after war requirements are met. The solution of the problem, from the standpoint of the business world, is dependent upon one of two factors: either (1) the maintenance of the present system of operation with an increasing amount of governmental interference, or (2) the practical direction of the operation of the railroads by the Government thru the present managers with the additional provision that much-needed capital for establishing better terminal facilities, more trackage, and the purchase of more equipment be guaranteed by the Government. The latter plan many think the more desirable from the point of view of railroad security holders and possibly of all other interests concerned. Under whatever program adopted, the industries working on private contracts will undoubtedly find that their activities will be somewhat interfered with and restricted.

2. Iron and Steel

Since the outbreak of the European war the steel industry has added to its productive facilities 103 open-hearth furnaces with an aggregate annual capacity of 4,205,000 tons. During the first half of 1917 construction was started of 72 more open hearth furnaces and eleven converters for duplexing and Bessemer plants, which will add 5,015,000 tons a year to output. Despite these extensions it is now apparent that the steel industry cannot meet the requirements of the war without interference with present contracts and the probable elimination of almost all private contracts for several years to come. It is estimated that the United States requirements alone will absorb forty per cent of the output of the mills and furnaces. The agreement of the steel companies to place the definite ordering of output under the control of the Government has clarified the situation from a war standpoint. This control may be expected to be gradually tightened to the exclusion whenever necessary of the private consumer of steel, especially in unessential industries.

3. Coal

The available supply of coal, as in the case of steel products, is directly bound up with the transportation situation. As a matter of fact, steel is itself dependent upon coal, for an essential to steel production is coke, and coke is made from coal. The bituminous coal supply is capable of great expansion provided cars can be furnished for loading

and transportation. At the present time the matter of Government control has not been definitely determined and is obviously dependent upon what future action is taken upon the transportation problem. Domestic and other private producers of coal may expect to secure a supply of coal sufficient to cover only their necessary requirements. Industries which are not basic or essential may have their fuel supply withdrawn altogether because of the existing limitation on transportation facilities. It would seem at the present time that coal producers may be authorized to pool their output which will be distributed by the producers under Government direction at fixed prices. Contracts with coal companies negotiated by unessential industries cannot be expected to hold in the face of war conditions.

4. Boot, Shoe and Leather Industries

The boot and shoe factories appear to be abundantly able, despite their present large war orders, to take care of all government contracts without any dislocation of normal business. The recent order of the government for 10,000,000 pairs of shoes represents but one-tenth of the annual output of the factories making men's shoes, which, according to the Census of 1914, produce about 98,000,000 pairs of shoes each year. The industry is of course dependent upon the available supply of hides and leather which is limited in comparison with the present great demand. Great Britain has already

found it absolutely necessary to control the leather supply, and on the occasion of granting its shoe contracts our Government found it at first expedient to arrange for the necessary leather supply.

5. Lumber

There seems to be no reason for believing that the lumber industry will experience any difficulty in meeting the extra requirements which the entrance of the United States into the war will place upon it. In some parts of the country the producers seemed to anticipate a shortage of labor, but on the whole the great obstacle to a large increase in production has been, as in the case of other industries, the inability to get adequate facilities for transportation. The Council of National Defense has issued a statement to the effect that the Government would require only about five per cent of the country's annual output, and that this should not cause much dislocation of the general market.

6. Motor Propulsion

The Allies have been buying of us many of the motor trucks and aero-motors used in the war, during the last three years. The output of motor vehicles during the year 1916, reached the figure 1,617,708, of which 98,000 were motor trucks. During the year the number of manufacturers of automobiles, motor trucks and engines increased from 512 to 572. There were at the beginning of 1917, 211 recognized manufacturers of motor trucks of

which the estimated production for 1917 is 165,000 —an increase of 67,000 over last year's production. Producers of gasoline estimate that the production of all kinds of motor vehicles for 1917 will be half a million in excess of that for 1916.

In this connection it is interesting to note that when the Government called for bids on the requirements of the army, the companies responded with bids for:

(1) Passenger Cars, to be produced, taking the total offers of all the companies, at the rate of 30,000 per month approximately.
(2) Army Trucks, at the rate of 1,526 per month, nearly a third of which could have been delivered within twenty-four hours, and the latest delivery to begin in four months.
(3) Army Chassis, Types A and B, at the rate of about 7,321 a month, deliveries to begin from immediately to an average of about three months.

These figures give some idea of the preparedness of the motor industry to meet the present needs of the country. It is not thought that the war demands will interfere with the production of pleasure vehicles.

7. Petroleum

The significant fact in connection with the production of petroleum with its various products in view of the present war situation is that the stock in storage at the beginning of 1917, was 20,000,000 barrels less than that at the beginning of 1916, showing that consumption already had exceeded production. In addition it is authoritatively estimated that the increased use of the automobile

combined with the war demand for petroleum would cause consumption this year to exceed production by as much as 60,000,000 barrels.

In the face of this situation, the refining capacity of the country appears to be inadequate to meet the increased demand for gasoline and other oil products. Without exception, the large refining companies either have built or are starting to build additions to their present plants or entirely new ones. Yet the lack of steel material prevents the extension of production, while the lack of transport facilities is also a distinct handicap to the great producing companies. Various devices for increasing the efficiency of gasoline have been tested and some substitutes have also been tried in Europe. Successful experiments of this kind may become effective in relieving the gasoline shortage.

8. Food Products—Milling

The milling industry of the United States is amply prepared to meet any additional demands upon its capacity which a state of war may impose. During the first six months of 1917 there was hardly a week during which the mills of any one of the large milling centers operated at capacity. In general the operation seems to have been at perhaps two-thirds capacity. Early in the year it was reported that there was practically no export trade except small lots to South American ports. Europe was increasing wheat importation to the detriment of the flour trade.

The facilities of the country in the milling industry seem to be ample for handling all the wheat that is delivered to the mills. The chief obstacle to the trade is the present inability of the railroads to provide adequate transportation facilities for grain and flour.

9. Meat Products

The packing industry is also in a state of preparedness to meet any of the demands of the moment. The packing industry is in fact already fully mobilized to meet the needs of the Government. The limit to its possibilities is the inadequacy of transportation facilities for moving finished products, and the scarcity of raw materials or meat cattle. As a matter of precaution the Federal Government in April issued instructions to the meat packers in Chicago to maintain a permanent reserve of 5,000,000 pounds of meat and similar foodstuffs for army purposes.

In offering the entire packing industry to the Government, Mr. Thomas E. Wilson, one of the large packers said, in part:

"The Commissary Department of the Army and Navy will find in the packing industry vast organizations—armies in themselves—ready at hand to sustain our forces in the field as no armies or navies have ever before been sustained. The meat-packing and food product industries can be mobilized in this national service without a hitch.

"Not only are they ready to render full service

on an hour's notice to the military and naval forces of our country, but to continue serving the civilian population without a break. I venture to say that in no period in the history of any nation has the food question—particularly as it applies to the meat industry—been less of a problem in case of war."

10. Dried Fruit and Canning

The business of the dried fruit and dehydrated food companies has been very much stimulated by the war in Europe, for much of their product has been used for the allied armies. Their only limit is the supply of raw materials and of transport facilities.

The Canning Industry, exceedingly important in time of war, is at present restricted chiefly by the fact that sheet metal for the manufacture of cans is practically sold out, no more being offered on the market for delivery for many months to come. This is in fact a problem of the steel industry.

11. Munitions

When the year 1917 opened, the munitions industry of the United States was amply prepared to meet any demands which might be made upon it as a result of the nation's entering the war. In the first place, the United States abounds in highly efficient machine shops which could readily be diverted to the manufacture of munitions. In the second place, the demands made upon the industry of this country by the Allies during nearly three

years of war have brought about an industrial preparedness hardly to be equaled.

Before April, 1917, as if to give the nation an opportunity to munition its own armies, the Allies found themselves able to produce all the finished munitions which they required, demanding instead raw materials and partly-finished product from American industries. The chief difficulty to be overcome in munitions production lay in the adaptation of existing machinery to the manufacture of the specifications of our government, which differ from those of foreign countries.

12. Copper

When it was evident that the United States would be in the copper market with large demands as a result of entry into the war, small doubt seems to have been expressed as to the ability of the producers to meet the demand. The unprecedented demand for copper during the last two years has led some leading producers to open old mines, to develop new ones and to construct additions to smelters and refineries. These enlargements have added enormously to producing capacity, thereby insuring an output fully adequate for a large increase over last year's requirements. It was estimated that the Government as manufacturers ordering thro the Council of National Defense would need 250,000,000 pounds before the close of the year—about an eighth of the probable output of the country for the year. All the large copper producing companies

of this country have been given orders to operate their plants at full capacity so that the requirements of this Government as well as those of the Allies can be taken care of without interruption, and the regular consumption supplied with as little delay as possible.

13. Textiles

It was only at the beginning of the European war that the textile industry held war orders of any magnitude. During 1914, the war orders for dry goods, miscellaneous textile fabrics, etc., amounted in all to about $19,583,000. During 1915 they rose to about $40,000,000. The allied industries, after the first rush of equipment, were able to provide the clothing for their armies. As a result, the expansion of the textile industry during the past three years has been one of the indirect results of the war, owing to the fact that people in this country had more money to spend. As a matter of fact, the rate of expansion has been less during the war than it was in the years immediately preceding. The industry is able to handle all Government requirements, the only drawback at present being in the supply of wool. England has commandeered the wool of all her possessions and the United States is practically limited to the domestic supply.

14. Governmental Control of Business

Up to the present time there has been no radical interference with business or industry by the Government. Thru various committees of the Advisory Commission of the Council of National Defense there has been developed a tendency toward the fixing of prices for Government work by conference and agreement. There has been no objection to reasonable and fair profits. In the case of the Shipping Board, Emergency Fleet Corporation, the building of cantonments and other activities of the War and Navy Departments, there has been a distinct development in the way of relating prices, not to market conditions, but to actual costs of production with the concession to the contractor or salesman of a reasonable percentage of profit, or a fixed fee for his services. Elaborate investigations at the direction of the President are now being made by the Federal Trade Commission as to costs of production of coal, iron and steel, and meat products.

It would seem that the facts thus obtained are to be used in a reasonable way for price determination and for the prevention of exorbitant profits. Evidently no more extreme Governmental control of industry is contemplated, and will not be undertaken unless manufacturers and other producers become unreasonable as to prices and profits. The commandeering of private shipyards has had for its primary object the expediting of work. The failure to take more drastic action toward railroad control is a clear indication of the Government's reluctance to use the extreme power which it possesses.

In certain industries, as in the case of iron and steel, coal, and the transportation industries at the

present time, it will probably become necessary for the Government to direct absolutely the production and distribution of commodities and services. The need for this action will become more imperative as the war progresses. At the present time, priority orders are issued practically on the assumption of the cooperation of certain industries and without any direct coercive force. The use of compulsion may become essential as the pressure on industry increases. Even then, of course, the private companies will direct the work itself.

It is also apparent that private undertakings, not working on official contracts directly or indirectly, will find it more and more difficult to secure raw materials, labor and transportation facilities. The pressure for the production of essential commodities—munitions, war supplies, and foodstuffs—will probably become greater, and may finally reach a stage where the use of raw materials and labor will be placed under Government direction. Orders may be issued for the suspension of unessential industries and for the employment of their labor and managerial ability in directions which are immediately important.

15. Development of Managerial Ability and Productive Efficiency

The awarding of Government contracts on a cost basis with the stimulus of a bonus for producing the ships and commodities at less than the Government's estimates, will have a tendency to develop the

productive efficiency of our industries in an unexampled way. The field for technical, executive and managerial ability will be constantly broadened, and already a premium has been placed upon such qualifications.

The output of the individual wage-earner will also be increased by the offer of war bonuses for productivity, and as time goes on, greater individual productivity may be expected from the fact that labor organizations, as in Great Britain, will be asked to give up their rules restricting output. This they will undoubtedly be willing to do in return for increased recognition of labor organizations and the protection and maintenance of the present working standards.

V. INDUSTRY AFTER THE WAR

Under these conditions American industry after the war should be more productive and in a better competitive condition than ever before in its history. The development of managerial ability and efficiency, the breaking down of restrictive practices, and the development of greater productive efficiency of the wage-earner, should make possible large reductions in the cost of production of each unit of output. A greater degree of cooperation between capital and labor will also probably have been developed. If the relations between industry and the Government are also handled in a spirit of broad patriotism without the seeking of temporary, excessive profits, business and industry may expect to be freed from vexatious and harmful regulation and coercion and be permitted to combine under generous Governmental regulation so as to secure the most economical and effective results in producing and selling.

At the termination of the war the banking and credit facilities available to American business should surpass those of any other country, and under these conditions together with those expected to develop during the war, American industry and business should be supreme in the home markets and well able to compete with any other country in the markets of the world.

VI. EFFECT OF THE WAR UPON BUSINESS IN CANADA

The outbreak of the war found Canada passing thru a year of depression and readjustment which followed a long period of real estate speculation and railroad development. The fact that business was already quiet tended to mitigate the shock of the war.

Enlistment and Conscription

Already, Canada has sent an army of 375,000 men to Europe and has in addition 30,000 men undergoing training at home. Since the total population of Canada before the war was less than eight million, this means that more than five per cent of the total population and probably twenty per cent of the available military man power of the nation has already entered service. In order that Canada may maintain her strength at the battle front, however long the war may last, a Compulsory Service bill has been passed by the national legislature under the leadership of Premier Borden.

Labor

So much of the available labor supply is employed in the manufacture of munitions that a great shortage is experienced in other industries. Owing to this shortage of labor, Canadian manufacturers

are generally reducing orders for export, except in the case of war supplies for the Allies.

Canadian War Orders

Up to the end of 1916, Canada received war orders amounting to $1,100,000,000. It is estimated that the amount will be at least $500,000,000 during 1917. Some of the orders received from Great Britain have been filled by subletting contracts in the United States just as Canadian manufacturers, according to capacity available, are getting a share of the war orders placed by the United States Government.

Expansion of Foreign Trade

As a result of these war orders there has been a tremendous expansion of Canada's export business, the total having increased from $430,000,000 in 1913-14 to nearly $1,200,000,000 in the year ending March, 1917—an increase of 180 per cent.

CANADIAN EXPORTS (MILLIONS)
(Fiscal year ending March 31)

	1917	1914	Increase
Manufactured Products	$496.6	$57.4	$439.2
The Mines	85.8	59.0	26.8
The Fisheries	24.7	20.6	4.1
The Forests	56.1	42.8	13.3
Animal Produce	128.2	53.3	74.9
Agricultural Products	363.5	198.2	165.3
Miscellaneous	6.3	0.1	6.2
Total	$1,161.4	$431.6	$729.8

This expansion in manufacturing has necessitated large imports of raw materials. During the past

year the total merchandise imports reached $845,000,000 as compared with $635,000,000 before the war.

Canada's sales abroad, however, have increased much faster than her importations, and during the past year she enjoyed a foreign trade surplus of $344,000,000, while as late as 1912-13 there was a deficit of over $300,000,000.

Cost of the War

According to a recent statement by Sir Thomas White in the House of Commons, Canada spent during the first three years of the war $623,000,000. At the present time her daily war expenditures at home and in France amount to about $900,000. This indicates that her expenditure during the coming year will be more than $325,000,000.

Borrowing and Taxes

Up to the first of April, 1917, Canada's war tax on business profits had produced about $32,000,000. It is expected to yield about $30,000,000 during the current fiscal year. In order to avoid interference with industrial development this tax is to be discontinued at the end of the present fiscal year. To obtain increased revenues, the Canadian government has recently proposed an income tax similar to that which exists in the United States.

For the purpose of assisting Canadian manufacturers to obtain war orders from abroad, Canada has loaned Great Britain nearly $400,000,000, of

which $250,000,000 has been advanced by the government and the remainder by Canadian banks and the Canadian Pacific Railway. In order, however, to be able to buy raw materials from the United States, it has been found necessary to borrow extensively in this country. To facilitate such borrowing the Royal Bank of Canada has recently purchased a controlling interest in the Merchants National Bank of New York. Altho lending abroad for ordinary purposes has been stopped, the United States Government has recently permitted New York financial interests to buy $100,000,000 of Canadian notes, and such loans will probably be continued in amounts sufficient to cancel Canada's trade indebtedness to the United States, which during the past year amounted to nearly $400,000,000.

Crops and the Food Supply

The war has brought prosperity to Canada's fishing industry as well as to her farmers. The latter have made substantial progress in paying off obligations for farm implements.

Canada needs only about fifty million bushels of wheat for her own use, so that out of a probable harvest of 275 million bushels this fall she will be able to export 225 millions to England and France.

Of animal produce Canada exported $128,000,000 during the past year which is double any year's total before the war.

Agricultural prosperity has resulted in a rapid increase in use of automobiles in western Canada.

Lumber

The reduction in shipping tonnage and the almost prohibitive increases in ocean rates have hurt the lumber industry in British Columbia. Wire rope, used in logging, is also difficult to obtain owing to the scarcity and high prices of steel. During the war it is not likely that the government will grant the supply of ships and machinery necessary for restoring the lumber business to its normal condition.

Munitions

Before the war Canada's munition capacity was almost negligible. At the present time her factories produce 800,000 shells per week. She has now 650 munitions factories, with which $850,000,000 worth of orders have been placed. Canada's present production of munitions is greater than that of any country before the war—Germany excepted.

Transportation and Shipping

With railroad trackage Canada is temporarily overbuilt. The Canadian Northern's territory is still in the early stages of development, and the financial effects of the war have driven it almost into bankruptcy. The recent indications that the government will purchase the road have caused an advance of ten points in the company's bonds in London.

The great commercial benefits of Canada's railroads during the war, however, have more than

offset their present financial weakness as a factor in the mobilization of war resources; for without adequate railroads the tremendous industrial development of Canada during the past two years would not have been possible.

Despite the abundant trackage there is a considerable interference with commerce owing to shortage of cars and ships. This is being remedied as fast as possible. On the shores of both oceans, on the St. Lawrence and on the Great Lakes, Canadian shipyards are actively engaged in the construction of steel ships of 4,000 to 9,000 tons each, in addition to smaller steamers and wooden sailing vessels.

Coal

Canadian industries have shared in the present fuel shortage, and the fact that no coal may be shipped from the United States except under special license, is restricting fuel shipments to Canada. During the open season on the Lakes the grain boats returning from Buffalo will be able to move considerable quantities of coal toward Western Canada; yet some restriction of Canadian manufacturing activity on account of the coal shortage will probably be suffered.

Business After the War

After the war Canada will necessarily lose an export trade in war materials amounting now to about $800,000,000 a year. There will also be a re-

lease of some 125,000 or more workers who are now employed in the manufacture of munitions and military supplies. A period of readjustment will ensue, during which the energies now devoted to warfare must be skilfully transferred to the arts of peace, in order that unemployment and business depression may be avoided.

As indications that this readjustment will be successfully effected, several favorable factors stand out prominently:

First; it is known that during the ten years before the war, immigration to Canada amounted to about 2,500,000 persons, mostly from Great Britain and the United States, and that capital from Great Britain was invested in Canada to the extent of $1,500,000,000. The fact that the period of development then begun is far from completed, suggests that Canada will still be attractive to foreign capital and population after the war.

Second; the railroad trackage already laid in Canada is capable of supporting a large increase in population and industrial development.

Third; the recent improvements in the banking system of the United States will facilitate American investment abroad, and the mutual interests in commerce and similarity of ideals and institutions should encourage the investment of American capital in Canadian industries.

Fourth; speculative inflation has been eliminated from the Canadian economic situation, and prospects of a period of rising values thruout the Do-

minion should stimulate an influx of both population and capital.

And last but not least, the war-tested quality of the political and economic leadership in Canada is a satisfactory guaranty that the opportunities for development in Canada and all mutual interests outside the Dominion will be welded together with a minimum of friction and with the least possible delay.

APPENDIX A

STATISTICS OF MANUFACTURES, 1899-1914

(Compiled from Reports of the United States Census Bureau)

	Manufacturing Industries				Per Cent of Increase [1]			
	1914	1909	1904	1899	1909 1914	1904 1909	1899 1904
Persons engaged	8,263,153	7,678,578	6,213,612	[2]	7.6	23.6	[2]
Salaried employes	964,217	790,267	519,556	364,120	22.0	52.1	42.7
Wage earners (average number)	7,036,337	6,615,046	5,468,383	4,712,763	6.4	21.0	16.0
Primary horsepower	22,547,574	18,675,376	13,487,707	10,097,893	20.7	38.5	33.6
Capital	$22,790,979,937	$18,428,269,706	$12,675,580,874	$8,975,256,496	23.7	45.4	41.2
Salaries and wages	5,366,249,384	4,365,612,851	3,184,884,275	2,389,132,440	22.9	37.1	33.3
Rent and taxes (including internal revenue)	582,039,665	457,883,110	[3] 131,964,825	[2]	27.1	...	[2]
Cost of materials	14,368,088,831	12,142,790,878	8,500,207,810	6,575,851,491	18.3	42.9	29.3
Value of products	24,246,434,724	20,672,051,870	14,793,902,563	11,406,926,701	17.3	39.7	29.7
Value added by manufacture (value of products less cost of materials)	9,878,345,893	8,529,260,992	6,293,694,753	4,831,075,210	15.8	35.5	30.3

[1] A minus sign (—) denotes decrease.

[2] Figures not available.

[3] Exclusive of internal revenue.

APPENDIX B

WAR CONTRACTS AWARDED BETWEEN APRIL 1 AND JULY 31, 1917

Miscellaneous Awards

Glass products:		
Bottles, lamps and glasses		80,045
Instruments		35,054
China	(items)	113,011
Porcelain, agate and enamelware	(items)	38,504
Paper	(sheets)	10,342,260
"	(pounds)	652,019
Coal	(tons)	3,296,302
Granite and gravel	(tons)	17,190
Abrasive wheels and whetstones	(items)	96,090

Electrical Supplies

Motors and generators		46
Meters and transformers		85
Batteries		33,021
Wire and cable	(feet)	31,645,870
Instruments of communication:		
Telephones		7,604
Radio sets		500
Signaling devices		1,000
Lamps		15,319
Searchlight outfit		1
Lighting fixtures		71,243
Outlet and panel boxes		2,576

Firearms and Ammunition

Cartridges	(items)	640,161,750
Cartridge cases	(items)	8,486,000
Shrapnel	(rounds)	7,499,000
Shells	(rounds)	7,386,510
Projectiles	(items)	2,222,500
Primers	(items)	10,984,344
Fuses	(items)	13,149,578
Loading, packing and assembling shells, fuses and shrapnel	(rounds)	9,063,890

Chemicals and Allied Products

Explosives	(pounds)	195,098,040
Acids	(pounds)	4,483,000
Sodas	(pounds)	306,700
Coal tar products	(gallons)	35,850

Medicines, antiseptics and disinfectants	(bottles)	24,874,306
" " " "	(tins)	360,500
Soaps	(pounds)	1,369,143
Paints	(pounds)	1,047,320
Oils, lubricating	(gallons)	348,619
Zinc	(pounds)	74,500
Aluminum	(pounds)	21,660
Canteens	(items)	1,000,000
Antimony	(pounds)	26,000

Metals and Metal Products

Brass and bronze products: [1]		
Ingots, sheets, tubing, rod, wire, cable, nails and rivets	(pounds)	2,656,128
Grommets, rings, valves, etc.	(items)	9,605,804
Iron and steel: [1]		
Steel, bar and rod, plate and sheet, miscellaneous castings	(pounds)	17,199,756
Gun forgings, plungers, mounts, etc.	(items)	365,005
Tin and terne plate	(pounds)	40,000
Tin cans	(items)	2,744,400
Cutlery and edge tools	(items)	2,032,825
Tools and instruments	(items)	139,166
Hardware	(items)	8,779,803
Large foundry and machine shop products	(items)	8,901
Lead, lead pipe, etc.	(pounds)	3,162,570
Nickel	(pounds)	138,200
Monel metal	(pounds)	51,650
Babbitt metal	(pounds)	5,200

Textiles

Textile fabrics and materials:		
Cotton goods, including tape	(yards)	87,380,001
Woolen and worsted goods	(yards)	5,931,794
Blankets	(items)	4,281,027
Silk goods	(yards)	853,725
Cordage and twine	(pounds)	[2] 1,865,630
Jute and linen goods	(yards)	2,702,145
Knit undershirts and drawers	(items)	9,779,629
Socks and stockings	(pairs)	11,783,866
Jerseys and watch caps	(items)	1,150,000
Articles from textile fabrics:		
Breeches and coats	(items)	[3] 4,777,400
Overcoats	(items)	1,455,000
Shirts, drawers and pajamas	(items)	[4] 2,923,662
Working garments	(items)	227,800
Furnishing goods	(items)	4,335,380

[1] Awards have been made for large quantities of other metal products, but owing to the many standards of measurement involved they cannot be reduced to a common denominator.

[2] Other small orders have been omitted because the standard of measurement could not be reduced to pounds.

[3] Exclusive of naval uniforms which are manufactured at the Navy Yards.

[4] Exclusive of army shirts manufactured at Quartermasters' Depots.

Articles from textile fabrics—*Continued.*		
Gloves (woolen and cotton)	(pairs)	1,071,765
Hats (felt)	(items)	1,346,000
Tents, paulins and wagon covers	(items)	1,514,757
Bags, sacks and canteen covers	(items)	3,444,733
Leather and Its Finished Products		
Leather, tanned, curried and finished	(square feet)	1,722,200
" " " " "	(pounds)	804,844
Boots and shoes	(pairs)	9,742,730
Gloves	(pairs)	483,400
Saddlery and harness	(sets)	42,356
" " "	(items)	2,299,285
Rubber Goods[1]		
Rubberized garments	(items)	1,041,163
Boots and shoes	(pairs)	457,826
Medical supplies (including bags, syringes, etc.)	(items)	281,632
Inner tubing and casings	(items)	18,540
Balloons	(items)	4
Miscellaneous articles (including gaskets, stoppers, etc.)	(items)	369,016
Ships and Boats		
Submarine torpedo boats		38
Submarine chasers		157
Cargo-carrying steamers:		
Steel		34
Wood		54
Battle cruisers		5
Scout cruisers		6
Lighthouse tender steamer		1
Torpedo boat destroyers		2
Airplanes and Seaplanes		
Airplanes		1,768
Seaplanes		6
Vehicles for Land Transportation		
Locomotives		21
Cars (trolley and box)		407
Motor trucks		10,652
Motor truck bodies		22,750
Motorcycles		5,000
Side cars		2,300
Motor ambulance bodies		2,308
Wagons and carriages		9,964
Wagon parts		111,295

[1] Awards have also been made for large quantities of other rubber products, but owing to the several standards of measurement involved they cannot be reduced to a common denominator.

END OF
TITLE